

FIGURE 1

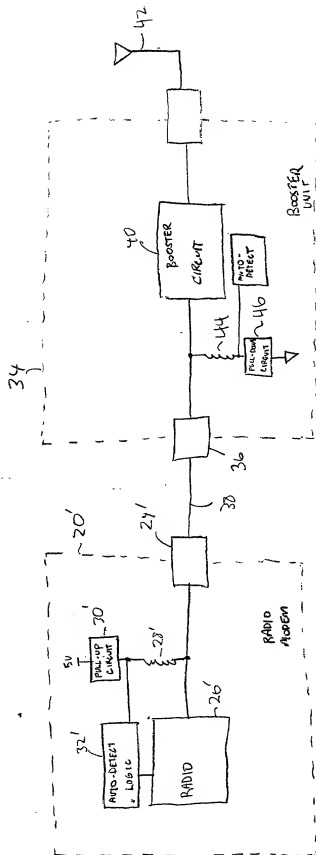


FIGURE 2

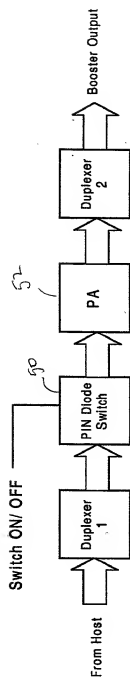


FIGURE 3

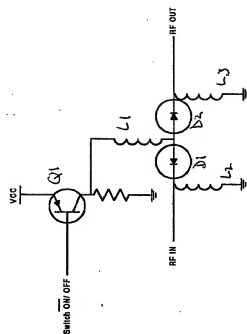


FIGURE 4

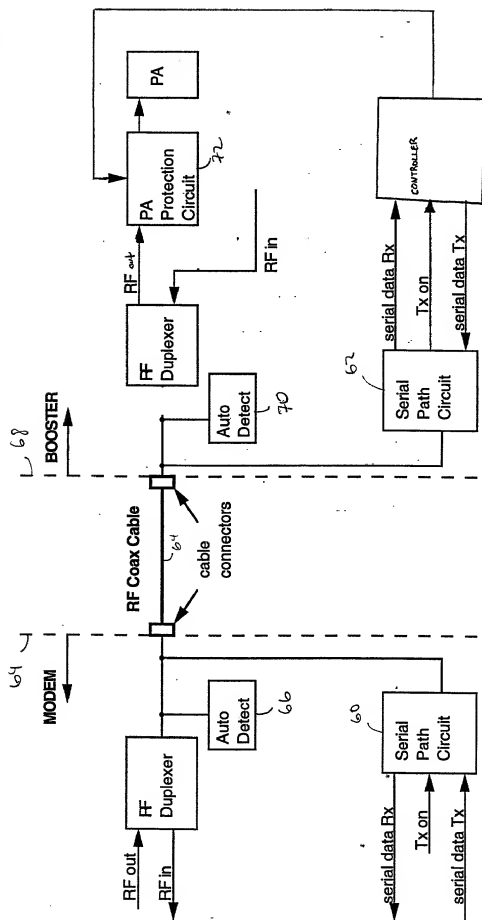
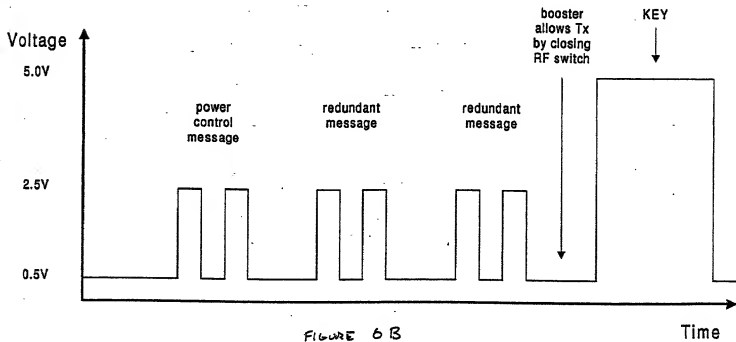


FIGURE 5

Timing diagram for the power control message. The vertical axis is Voltage (0.5V to 2.5V) and the horizontal axis is Time. The diagram shows two sequences of pulses. The first sequence, labeled 'POWER CONTROL MESSAGE', starts with a 'start bit' and contains pulses for '1', 'C1', 'C0', and 'P2'. The second sequence starts with a 'start bit' and contains pulses for '1', 'P1', 'P0', and a 'stop bit'.

FIGURE 6A

Time



C[1:0] denote channel band (low, mid, or high)
P[2:0] denote power level (0 through 7)

RADIO
MODEM
ACTION

BOOSTER
UNIT
ACTION

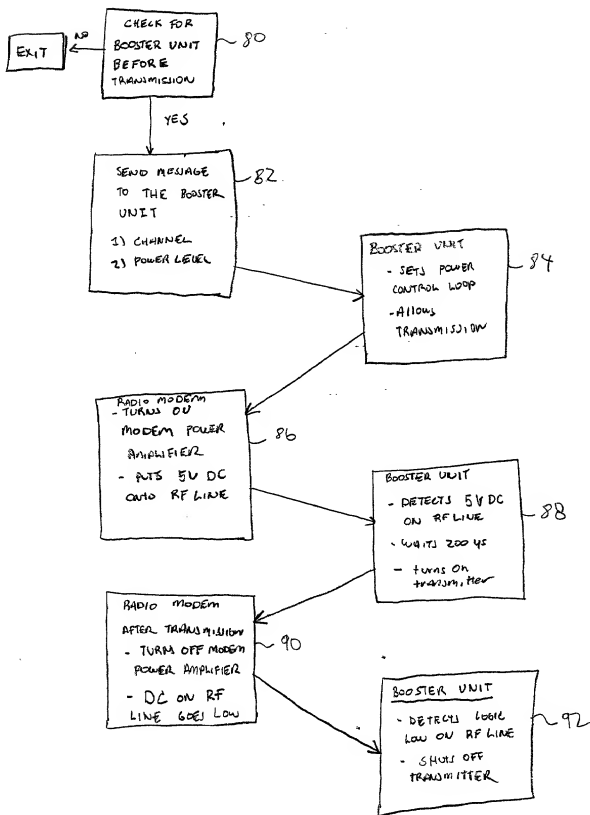


FIGURE 7

The schematic diagram is divided into two main sections: **Modem** and **Booster**.

Modem Section:

- RF Front-End:** Features an RF Duplexer connected to TX RF and RX RF antennas. A matching network consisting of inductor L1 and capacitor C3 is used to interface with the Booster section.
- Baseband IC (U1):** A central integrated circuit with multiple pins.
 - Pin 1 is connected to the TX RF antenna.
 - Pin 2 is connected to the RX RF antenna.
 - Pin 3 is connected to the TX On control signal.
 - Pin 4 is connected to the RX On control signal.
 - Pin 5 is connected to the TX Data signal.
 - Pin 6 is connected to the RX Data signal.
 - Pin 7 is connected to ground.
 - Pin 8 is connected to the TX On control signal.
 - Pin 9 is connected to the RX On control signal.
 - Pin 10 is connected to the TX Data signal.
 - Pin 11 is connected to the RX Data signal.
 - Pin 12 is connected to ground.
- Matching Network:** Inductor L1 and capacitor C1 are used to match the impedance of the RF front-end to the Baseband IC.
- Control Signals:** TX On, RX On, TX Data, and RX Data signals are provided to the Baseband IC.

Booster Section:

- RF Front-End:** Features an RF Duplexer connected to TX RF and RX RF antennas. A matching network consisting of inductor L2 and capacitor C4 is used to interface with the Modem section.
- Baseband IC (U2):** A central integrated circuit with multiple pins.
 - Pin 1 is connected to the TX RF antenna.
 - Pin 2 is connected to the RX RF antenna.
 - Pin 3 is connected to the TX On control signal.
 - Pin 4 is connected to the RX On control signal.
 - Pin 5 is connected to the TX Data signal.
 - Pin 6 is connected to the RX Data signal.
 - Pin 7 is connected to ground.
 - Pin 8 is connected to the TX On control signal.
 - Pin 9 is connected to the RX On control signal.
 - Pin 10 is connected to the TX Data signal.
 - Pin 11 is connected to the RX Data signal.
 - Pin 12 is connected to ground.
- Matching Network:** Inductor L2 and capacitor C2 are used to match the impedance of the RF front-end to the Baseband IC.
- Control Signals:** TX On, RX On, TX Data, and RX Data signals are provided to the Baseband IC.

FIGURE 8